SUPPLEMENT
TO THE
British Medical Journal

LONDON: MARCH 14TH, 1891.

A WEEKLY EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(229) Transmission of Tuberculosis by Cow's Milk. At a meeting of the Académie de Médecine on February 24th (*Bull. de l'Acad. de Méd.*, 3me Série, t. xxv, No. 8), M. Auguste Ollivier presented a communication on the transmission of tuberculosis by cow's milk. Two months previously he had been called in to a girl, aged 20, at Chartres, who was suffering from acute tuberculous meningitis. Her parents were both very robust, and she herself had had no previous illness to speak of, and lived under excellent hygienic conditions. On December 14th, 1890, she complained of headache, which gradually became worse in spite of antipyrin; on the 25th she was restless during sleep; on the morning of the 26th coma supervened. There was then paralysis of the limbs, with squinting in both eyes upwards and to the right. There was also profuse perspiration, with almost incessant convulsive movements of the face and limbs. The coma gradually deepened till death, which occurred at 9 o'clock the same evening. The girl had been educated at a convent in Chartres, where, within a few years, tuberculosis had attacked twelve pupils, five of whom had died. It appeared that on November 26th, 1889, the veterinary inspector had condemned the flesh of a cow between 9 and 10 years old which had been slaughtered that morning in the Chartres abattoir. The animal seemed to be in good condition, but there were tubercles in the lungs, the peritoneum, and the paunch, while the udder was "completely stuffed with them." This cow had belonged to the convent where the patient had been educated, and its milk had for nine years been consumed by the pupils and others in the house. Between October, 1887, and the date of the slaughter of the cow, one of the pupils died of tuberculous peritonitis, one of general tuberculosis commencing in the mesenteric glands, and three of pulmonary phthisis. Another pupil developed tuberculous disease of the elbow, and six others showed evident signs of tubercle of the lungs, but on being removed from the school, and kept for considerable periods in the country, recovered. In none of these cases was there any family history of tubercle. The patient whose case M. Ollivier reports had left the school four years before the onset of her fatal illness, but he is nevertheless disposed to trace the infection to the milk of the diseased cow which she had drunk during her stay in the convent. The moral he draws from the whole story is that, in the words of the opinion formulated by the Académie de Médecine itself last year, "it is prudent to use milk only after it has been boiled." In the discussion which followed, M. Nocard stated that some eighteen months previously a large cattle breeder had sent him the viscera of a fine calf, 4 months old, which had died suddenly. He found the mesenteric glands hypertrophied, caseous in the centre, stuffed with tuberculous granulations, and swarming with Koch's bacilli. As the calf had never had any milk but its mother's, M. Nocard declared that the latter must be tuberculous, the udder being probably affected. The animal, however, was a splendid specimen of her breed, had gained several prizes, and presented every appearance of the most perfect health. Nevertheless, it was found on *post-mortem* examination that the lungs were tuberculous, and the udder was infiltrated with extremely fine, almost microscopic, tuberculous nodules. Cases of this kind are, according to M. Nocard, by no means infrequent.

(230) Primary Tuberculous Infection in Bronchial Lymph Nodes.

In a paper contributed to the *New York Medical Journal*, February 21st, 1891, Dr. W. P. Northrup insists upon the truth of the theory, which has not obtained universal acceptance, that the primary infection in tuberculous disease takes place into the small lymph nodes about the root of the lungs. He records an interesting case of a child who died of tuberculous meningitis, and in whose body the history of the tuberculous disease could be clearly traced. With chalky deposits in the bronchial glands were associated tuberculous disease of the lung of a more recent date, disease of the hip-joint of a still later period, culminating in acute disease in the meninges, most recent of all. Of 125 of his own cases of tuberculous disease, Dr. Northrup puts aside those in which the tuberculous disease was too advanced to allow of deductions being made, and of the remainder he records that 20 showed cheesy or chalky changes in the bronchial glands, with tuberculous disease in other organs. In 42 the only cheesy change was in these glands, and in 9 cases the tuberculous lesion was limited to lungs and bronchial glands, those in the latter being the more advanced. In 13 cases there was tuberculosis of the glands only; of these 13 cases 7 had had diphtheria, culminating in fatal pneumonia. Some cases quoted from other writers bring the total number of observations up to 134, in 97 of which there was evidence of primary affection of the bronchial glands. As to the mode in which the glands become infected, he believes that the bacilli may be inhaled, may pass

through the mucous membrane, and, being taken up by the lymph stream, may be conveyed to the nearest gland and there arrested, their subsequent spread and development depending upon the individual susceptibility of the patient. The paper is accompanied by some remarkably good illustrations of tuberculous glands at the root of the lung.

---

(231) Acromegaly.

M. C. LUZET (*Archives Générales de Médecine*, February, 1891) gives a critical review of acromegaly, based on the thesis of M. Souza-Leite which appeared last year. The symptoms are considered under the following heads:—(1) Objective symptoms: (*a*) Fundamental—the hands are increased in breadth and thickness, not in length; the fingers are as large at the end as at the base; the functions of the hand are preserved; the feet are affected in much the same way; the face is elongated; the nose is much increased in size in all its parts; the lips thickened and the tongue enlarged; the chin is large and projecting; the antero-posterior diameter of the head is increased; there is kyphosis in the cervico-dorsal region of the vertebral column and a compensatory curve lower down; the clavicles are thickened. (*b*) Accessory—the thyroid body is usually lessened in size, the external generative organs are hypertrophied, the uterus and testes atrophied; there is sterility; in advanced cases muscular force is diminished; tendon reflexes are never increased. (2) Subjective symptoms: (*a*) Fundamental—headache is a prominent symptom; pain in the limbs, suppression of the menses in women; impaired vision in all its degrees; increased appetite and thirst. (*b*) Accessory—blunted hearing and loss of smell are sometimes noted. (3) General and mental symptoms—depression is sometimes observed, sleep is disturbed, the intelligence is preserved, the patient may be suicidal. The onset of acromegaly is indefinite and the course slow. Little by little the changes in the bones take place, and at length the patient cannot be recognised. The disease lasts ten, twenty, or thirty years. Death may take place from a real cachexia, sometimes by syncope or with signs of cerebral compression, or it may be due to intercurrent disease. Acromegaly begins between 19 and 26 years of age; the sexes are equally affected. Little is known about its causation; it is neither hereditary nor congenital. After death, besides the change in the bones, the pituitary body is found enlarged with a true hypertrophy. It may press upon adjacent parts like the optic nerve. The great sympathetic has been found hypertrophied, the thymus persistent, and the thyroid body altered in size. Also changes in the organs of generation and of phonation have been observed. Marie says that in the skeleton the hypertrophy shows itself in the bones of the extremities and the extremities of bones. There are three theories as to the pathogeny, namely, that of (1) Klebs—an angiomatosis connected with a persistent thymus; (2) Freund—an inversion in the evolution of the reproductive life; and (3) Marie—a dystrophy allied to myxœdema, and affecting some organ (as yet unknown, but possibly the pituitary body) of trophic function, whose relations are to acromegaly as those of the thyroid gland are to myxœdema. Bearing in mind the symptoms of acromegaly as given above, the diagnosis is easy. Myxœdema, osteitis deformans, certain forms of chronic rheumatism, and some other rare diseases have been mistaken for it. The prognosis of acromegaly is not serious so far as life is concerned, but there is no tendency towards recovery. The possibility of suicide must be borne in mind. Treatment at present can only be symptomatic. Antipyrin is useful for the headaches. The iodides, salicylates, and arsenic have been tried.

SURGERY.

(232) Plastic Operation for Repair of the Pharynx and Œsophagus.

DR. VON HACKER, of Vienna (*Centralbl. f. Chir.*, February 14th, 1891), referring to a recently reported case in which Dr. K. Poulsen performed a plastic operation for the repair of a defect of the mucous membrane of the pharynx and upper part of the œsophagus, states that he reported in 1887 a case in which a similar operation had been carried out. This operation he was led to perform by the results of a series of experiments he had practised on hairless animals, which proved that it was possible after removal of all but the posterior wall of the pharynx, or of a short extent of the œsophagus, to make good the defect by first taking two square flaps, one from each side of the neck, and by fixing the inner borders of these to the corresponding borders of the posterior wall of the pharynx and œsophagus; and afterwards, in a second operation, by closing the gap by further dissection and displacement of skin. The details of these experimental operations do not seem to be very clear, and there is some difficulty in making out, both from the written description and the illustrative sketches, how the trachea was dealt with. Dr. Poulsen's operation was performed after extirpation of the larynx. The patient died from pneumonia after an interval of seven weeks. The results of the operation, however, were so far satisfactory as to prove that in the human subject the skin of the neck is suitable for plastic and reparatory operations on the pharynx and œsophagus. The patient was able to swallow soon after the operation. This result Dr. von Hacker would have anticipated from the results of his experiments, and from his conviction that the upper part of the œsophagus does not take part in any peristaltic action. It is pointed out by von Hacker that skin, when displaced so as to occupy the situation of destroyed or excised mucous membrane, does not lose its special characters and acquire those of the latter structure. Two cases are quoted in which, after plastic operations on the cheek by skin flaps taken from the lower part of the face, a constant growth of hair occurred on the inner and oral surface.

---

(233) Intracranial Abscess.

DR. EDGAR GRUBERT, a surgeon attached to the Military Hospital at Wilna, publishes two cases of intracranial abscess (*St. Petersb. med. Wochenschr.*, No. 5, 1891). The first was one of abscess in the cortical layer of the left cerebellar hemisphere following acute inflammation of the middle ear on the left side. The patient was a recruit, aged 22, who came under the author's treatment for intense and extensive inflammatory destruction of the middle ear, supposed to have been produced through the introduction of some caustic fluid by the patient himself, with the object of escaping military service. In consequence of profuse and repeated bleeding from the affected ear, it was found necessary to apply a ligature to the left common carotid. Fifteen days

later renewal of the bleeding from the ear necessitated deligation of the corresponding vessel on the right side. In the interval between these two operations Dr. Grubert was led by certain somewhat obscure symptoms, such as febrile exacerbations and very severe and persistent headache above and behind the left ear, to diagnose cerebral abscess, and trephined over and explored with a hollow needle the temporo-sphenoidal lobe. No pus could be found, and the operation failed to afford any relief. The patient became very weak after ligature of the right carotid, and died comatose on the sixteenth day from the date of the third operation. At the *post-mortem* examination an abscess of about the size of an almond, and containing thick greenish pus, was discovered in the white substance of the left lobe of the cerebellum, just behind the petrous portion of the temporal bone. In his remarks on this case Dr. Grubert discusses the association of cerebellar abscess with disease of the middle ear, and the symptoms and diagnosis of the former affection. It is pointed out that death in this case was directly due to cerebral œdema and internal hydrocephalus. The occurrence of this condition after ligature of both common carotids can be attributed only to a tendency in the cerebro-spinal fluid to flow to and accumulate within the skull, due to the failure of the normal *vis a tergo*. As the volume of the cerebral mass is constant, and a vacuum in the intracranial cavity is inconceivable, a deficiency in the supply of blood must inevitably result in the presence of an increased quantity of cerebro-spinal fluid. The patient therefore, Dr. Grubert thinks, died from the effects, not of cerebral abscess, but of deligation of the carotid artery on both sides. The second case reported by Dr. Grubert is one in which an abscess in the white substance of the right temporo-sphenoidal lobe, following a compound fracture of the cranium, caused death through its rupture into the lateral ventricle. This case, it is pointed out, is in several respects a very remarkable one. Compound fracture of the skull was followed not, as usually occurs in instances of suppuration, by a cortical or subdural abscess, but by an extensive collection of pus on the whole substance of the brain, the surface of the brain having been very slightly injured. This deep-seated abscess had been developed very early, and took a rapid course. The patient, a man aged 26, remained in good health and quite free from any head symptoms for five days after the receipt of injury, and died on the tenth day.

MIDWIFERY AND DISEASES OF WOMEN.

(234) Perforation of a Myomatous Uterus by the Sound and Curette.

Dr. Winter (*Centralbl. f. Gynäk.*, January 3rd, 1891) demonstrated, before the Berlin Obstetrical Society, a patient from whom he had been forced to remove an interstitial myoma as big as a man's head under the following circumstances. The woman entered hospital, and a pelvic examination was made in the usual manner. The uterus was strongly anteflexed, and, in consequence, was perforated. The curette was at once employed; it entered the perforation, detached some of the posterior peritoneal investment of the uterus, wounded a big vein, and then perforated the peritoneum. Two hours later the patient appeared very pale, and there was physical evidence of blood above the level of the groins. Half an hour later she was in a state of collapse, so that an abdominal section was performed. Much coagulated and fluid blood was removed from the peritoneal cavity. Close above the internal os, in the part of the uterine wall which formed the posterior and inferior portion of the capsule of the myoma, was the laceration, about two inches wide and very ragged. To sew it up seemed inadvisable, so the myoma was amputated. As the peritoneum had been much detached and the laceration lay low down, a regular pedicle could not be formed. The stump of the uterus was fixed by a continuous catgut suture in the lower angle of the wound. Convalescence was retarded by localised pulmonary embolisms.

(235) Delivery of Anencephalous Monsters.

Dr. Pauthier, of Senlis (*Revue Obstét. et Gynéc.*, January, 1891) describes two cases which occurred in country practice. A young peasant girl gave birth to a monster with an enormous meningocele. The froglike appearance of the face was characteristic. The trunk was normal, both the hands and feet clubbed, with complete palmation of the digits. Labour seems to have been normal. Strange to say, the infant lived several hours, and seems to have been killed by neglect. The family were horrified at its appearance; when born it uttered loud hoarse shrieks, and its appearance was naturally terrifying. Dr. Pauthier was asked to kill it. In the second case labour was difficult. The midwife rightly diagnosed death of the fœtus before delivery. Strong pains continued for several hours; two feet, a hand, and a tuberous mass, taken for the breech, presented. The membranes ruptured three hours later, but the fœtus did not advance. An hour later the midwife drew the legs down to the vulva, but on the firmest traction the child could not be delivered. Something like a mouth was felt on the tuberous mass, the feet were pushed up, and then what felt like another mouth was detected. After some more pains something came down to the vulva; it felt like a breech as it descended, but when it reached the vulva a large open eye was seen on its surface. The midwife, fancying that there might be twins and that an obstetrical operation was needed, sent for Dr. Pauthier. The complete change in presentation had confused her, and she could not feel certain that two heads were not in the uterus. Before Dr. Pauthier could arrive, Nature and a little firm traction by the midwife terminated the labour. The monster was dead and already beginning to macerate. It was a male anencephalus, with a large well-formed body and double talipes varo-equinus. There was a large tuft of hair on the left side of the thorax, passing backwards from the precordial region almost as far as the gaping vertebral arches.

(236) Arrested Breech Presentation.

Dr. Mensinga, of Flensburg (*Der Frauenarzt*, February, 1891), was called in to a case of puerperal convulsions in a robust primipara, aged 22. He found her rather confused, but she could answer questions. She had been six times attacked with convulsions in two hours; a strange-looking blue mass projected from the vulva. On close examination in a good light, Dr. Mensinga found that the mass was a sloughy, greatly swollen scrotum, with the penis. The integument was coming off. On attempting to reach the nearest thigh of the child the vulva was found

so constricted that manipulations were difficult, so the blunt hook was placed over the thigh. Though but moderate traction was made, the femur broke in the vagina. The rest of the body was gradually delivered; the chin was depressed by means of the introduction of the finger into the mouth. As the forehead swept over the perineum that structure was torn. The child was born asphyxiated and could not be revived. After the delivery of the placenta, the perineum was sewn up; it was well healed on the fourth day, when Dr. Mensinga again saw the patient. She did not recognise him, and had no notion of anything that had happened during her labour. He did not attempt to account for the sloughing of the fœtal scrotum, nor could he satisfy himself how the femur was broken. A slight abrasion on the skin of the thigh proved that the hook had been applied and pulled in the right direction.

---

(237) Acute Intestinal Obstruction caused by Dermoid Cyst of Ovary.

M. RICARD (*Gaz. des Hôpitaux*, January 1st, 1891) describes a most instructive case where acute symptoms of obstruction came on in a waitress at a restaurant, aged 24. Intense pain in the right side of the abdomen set in when she was at work. She had to go home; furious vomiting occurred, and, at the end of the second day, it became fæcal. Three days later she was sent to hospital in a state of collapse, with all the symtoms of acute peritonitis. The abdomen was opened and a dermoid ovarian cyst was found in the right iliac fossa, covered with adherent, inflamed, and distended intestines. These were detached, and then two pedicle-like structures were found. The inner and upper proved to be formed by 4 inches of small intestine, perfectly empty and intimately adherent to the cyst, whence it had to be carefully dissected. The lower was a true pedicle, twisted, thick, and fleshy. It was transfixed close to the uterus, and, some grumous matter oozing from its cut surface (possibly pus in the tube), the thermo-cautery was employed. The peritoneum was not flushed, but simply cleaned with pads of tarletan. No drainage was employed. On the third day the bowels acted spontaneously. The pain and vomiting had ceased immediately after the operation. Recovery was perfect. The close adhesion of the intestine to the cyst was evidently the cause of the obstruction. Before the attack of pain, which seized the patient quite suddenly, she had never been ill, never felt abdominal pain, and never noticed any tumour in the hypogastrium. The menstrual periods had been normal. Notwithstanding these negative symptoms, a small ovarian tumour existed and caused acute obstruction.

---

(238) Anatomical Rigidity of the Cervix during Labour.

DR. GUÉNIOT (*Revue Obstétricale et Gynécologique*, February, 1891) discusses two questions raised by Dr. Loviot. In anatomical rigidity of the cervix during labour, is the obstetrician justified in making incisions? If he be justified, what is the best method of practice? Dr. Guéniot answers the first in the affirmative, provided that waiting and gentler measures have failed. In the case of a simple effaced cervix that remains rigid, the edges should be very gently snipped in several places to the right and left, by means of long-handled scissors. When strict antisepsis is enforced this practice is free from danger. The difficulty and danger are great when the cervix retains its normal length down to term, especially when the upper part remains rigid. There is great risk of wounding large vessels. Dr. Guéniot proceeds in these cases just as in cancer of the cervix. Not long ago he had to incise a cervix deeply involved in malignant disease, in two labours at term, where version was necessary. In order to widen the contracted os, he had to cut into cancerous tissue. He passed up a strong pair of scissors, guarding the blades between two fingers, and made numerous minute incisions from the sharp edge of the external, upwards as far as the internal, os. He stretched the canal frequently with the fingers, so as to make prominent numerous bands which were the chief obstacles to dilatation. These bands were then nicked with scissors. The cervix was, in both cases, widened sufficiently in this manner to allow of turning. But little blood was lost. Dr. Guéniot, having to deal with a labour retarded by anatomical rigidity of the upper two-thirds of a long cervix, adopted the same procedure as in the two cases of cancer; chloroform was given. Instead of the scissors, a probe-pointed bistoury was used. Many sharp bands were put on the stretch by the manœuvre described above. The os internum was the narrowest part of all, and required seven or eight superficial radiating nicks with the bistoury. Three fingers could then be introduced into the uterine cavity with ease, all rigidity had vanished and labour was left to Nature. On the above lines of practice, any resistent cervix may safely be dilated. The incisions should be many and shallow.

DISEASES OF CHILDREN.

(239) Hæmoptysis in Young Children.

THE *Revue Mensuelle des Maladies de l'Enfance*, February, 1891, contains a report on two fatal cases of hæmoptysis observed by M. A. Aldibert, *interne* in the wards of Dr. Cadet de Gassicourt. In the first case a boy aged 4 came under treatment about four months after the commencement of an attack of whooping-cough complicated by broncho-pneumonia, with symptoms and physical signs which appeared to point to tuberculous consolidation of the right apex. A few days afterwards the expectoration became tinged with blood; on the following day red, frothy, almost pure blood was expectorated, and on the next day a sudden copious hæmoptysis proved fatal. The necropsy revealed a pyramidal mass of caseous softening glands enveloping the trachea, bronchi, large vessels, and nerves, and resting by its base upon the pericardium, to which the lungs were adherent. This pyramidal mass contained towards its base a cavity bounded above by the bronchi and below by large branches of the pulmonary artery; the right bronchus and the branch of the pulmonary artery going to the upper lobe were both perforated, and the blood had found its way from the latter to the former through the abscess cavity. The artery was not aneurysmal, but its walls were softened. In the second case, a boy aged 3 was admitted with signs of chronic consolidation of the right lung. The general condition of the child was gr wing slowly worse, when, about a month after admission, it was suddenly seized with rapidly fatal hæmoptysis. The necropsy showed caseous enlargement of the glands at the root of

the right lung, and a cavity in one in relation with the first divisions of the bronchus. The cavity was traversed by three branches of the pulmonary artery; one of these presented a fusiform enlargement and a small perforation; the walls of all three branches were softened. The large division of the bronchus going to the middle and inferior lobes was also perforated and the cavity was full of clots. In both cases the perforation of the pulmonary artery was due to tuberculous arteritis. M. A. Aldibert comments on the impossibility of foreseeing such attacks of fatal hæmoptysis, but points out that the history of the first case shows that a very guarded prognosis should be given in the case of even slight hæmoptysis in children probably suffering from tuberculosis of the intrathoracic glands. He discusses other causes of hæmoptysis in children, pointing out that primary hæmoptysis is extremely rare and very obscure in origin, and that the causes of secondary hæmoptysis are pulmonary gangrene, chronic phthisis, and enlargement of the tracheo-bronchial glands. Sudden severe hæmoptysis is a rare occurrence in children from any cause, the least infrequent being that due to the last of the above named three causes, while that due to the first is the rarest.

PHARMACOLOGY AND THERAPEUTICS.

(940) Cantharidinate of Potash in Tuberculosis.

At the meeting of the Berlin Medical Society, on February 25th, after Professor Oscar Liebreich had presented his communication on his new remedy for tuberculosis (see BRITISH MEDICAL JOURNAL, February 28th, p. 475, and March 7th, p. 550), reports on cases treated by the method were submitted by Drs. Paul Heymann and G. Guttmann, and Professor B. Fraenkel (*Berlin. klin. Wochenschr.*, March 2nd, 1891). Dr. Paul Heymann has used cantharidinate of potash in 27 cases, in 10 of which the treatment had only just been begun at the date of the report. Of the remaining 17, 11 were suffering from tuberculous lesions of the larynx of a more or less serious nature. In all these cases the lungs were also affected, and in all except one there were bacilli in the sputum. They were all treated at the Poliklinik as out-patients, and made no change in their ordinary mode of life. The dose injected was from 1 to 4 decimilligrammes; only once did the injection cause redness, but never suppuration. The injections were as a rule given in the back, but in two cases the patients were so thin that the nates were chosen. Sometimes the injections were followed by headache and giddiness, and occasionally there was slight diarrhœa, which ceased of itself. In some cases smarting in passing water was complained of, and one patient said he noticed blood in his urine after an injection of 4 decimilligrammes. The following were the results of the treatment (which was in no instance supplemented by any other): After three or four injections the voice improved steadily, till hoarseness almost entirely disappeared. The patients felt much better. The bacilli, however, showed no change. In the chest the physical signs cleared up, and even disappeared in some cases; the expectoration became smaller in quantity, more mucous and less frequent; cough subsided, and in 4 cases ceased altogether; night sweats diminished, and in some cases disappeared. In one case hectic fever ceased after the fourth injection, but this result was unique. In tuberculous disease of the tongue the granulations became flatter and paler, and the ulcers became cleaner and began to heal, as is seen in syphilitic affections under the use of iodide of potassium. In one patient, who was almost voiceless and who was the subject of tuberculous ulceration of the larynx, after nine injections the ulcer had disappeared, and after three more the only abnormality in the larynx was a scarcely visible infiltration of the left vocal cord, whilst the physical signs in the chest had entirely cleared up. Another patient with catarrhal ulcers in the larynx was cured after ten injections; in three others suffering from similar conditions the infiltration and redness of the cords began to diminish as soon as the injections were commenced. Dr. G. Guttmann related the case of a patient whom he had been treating for typical trachoma in the right, and recent granulation of the left, eye. The man developed laryngitis, and was treated by Liebreich's method. When Guttmann saw him again there was no trace of inflammation in the left eye, while there was only a trifling swelling in the right. Professor Fraenkel said he had treated 15 patients suffering from laryngeal tuberculosis by the new method; 5 of these he presented to the Society. Under the treatment the redness and infiltration of the cords had steadily diminished, pain in swallowing had disappeared, œdema of the epiglottis and ary-epiglottic folds had subsided, while ulcers had gradually become smaller, and in some places had entirely healed. In one patient there was no longer any trace of ulceration. In the cases in which the voice had been lost, it had been restored. In one patient Dr. Fraenkel had noticed the appearance of submiliary nodules which became yellow, broke down, and finally disappeared, leaving a scar in their place. In another patient there was at the date of the report a serous exudation at the level of the larynx, a fact which seemed to him to confirm Liebreich's explanation of the mode of action of his remedy. When this patient coughed he brought up serous fluid from his larynx. The pain of the injection lasts some time, and in one case there was some difficulty in micturition after an injection of 1 decimilligramme. Fraenkel thinks he has noticed a slight diminution in the number of bacilli, and the microbes seemed to have lost their reaction to colouring matters; they had to be kept in the staining solution for twenty-four hours before they were sufficiently stained. The rapid improvement seen in patients submitted to the treatment was due to a direct action of the remedy on the bacilli. None of the cases could be said to be cured, but Fraenkel thinks that the most brilliant results may be hoped for from the method.

(941) Hypodermic Injections of Guaiacol in Phthisis.

Professor Picot, of Bordeaux (*Semaine Médicale*, March 4th, 1891) reports the results of therapeutic experiments made during a period of two months in the Hôpital S. André in the treatment of pulmonary tuberculosis and pleurisy of tuberculous origin. He prefaces his report with a declaration that he does not pretend to cure tuberculosis, but only records certain results which he has in certain cases seen follow the use of a solution of guaiacol and iodoform in perfectly sterilised olive oil and vaseline. Each cubic centimetre of the fluid, which is perfectly pure and transparent, contains 1 cen-

tigramme of iodoform and 5 centigrammes of guaiacol. The supraspinous fossæ were chosen as the seat of injection, as there is not much movement in that region, and it does not bear the weight of the body when the patient lies on his back. The initial dose was 1 cubic centimetre which was gradually increased to 3; no swelling or other local reaction was ever observed at the site of puncture. In about one case in twenty a certain amount of numbness was felt in the shoulder of the same side after an injection, but this always disappeared in from five to six hours. That the substance injected is absorbed was proved by the fact that iodide of potassium was eliminated in the urine. A small quantity of iodide of potassium was also found in the lungs of a patient who died during treatment. The only sign of general reaction is profuse perspiration, especially of the face and chest, which comes on, as a rule, from twenty to thirty minutes after the injection. The cessation of the sweating is followed, as a rule, by a fall of temperature from five-tenths of a degree to one degree C. The injections did not affect the digestion, but in some cases, when the treatment had been carried out for a week or ten days, slight colic and diarrhœa were complained of; these symptoms ceased on discontinuing the injections. No effect on the urine was observed. With the view of determining whether the remedy could give rise to fresh crops of tubercles, Dr. Picot used the injections "in three phthisical subjects in whom the considerable lesions could not be checked in their progress, and who were likely at an early date to allow of the wished-for anatomo-pathological examination." One of these, a man, aged 55, with cavities at both apices, received thirteen injections between January 28th and February 10th. He died on February 11th, and at the necropsy "it was easy to see that neither in the lung nor in the intestine were there recent crops of tubercles nor any submiliary granulation." Another patient, aged 19, both of whose lungs were riddled with cavities, underwent a series of injections from January 16th to 31st. He died on February 21st, and no recent granulations or submiliary tubercles were found. The third case gave similar results. These *post-mortem* examinations proved that the injections do not set up congestion around old tuberculous foci nor in the interior of cavities, and hence that there is no danger of their causing inflammation of the pulmonary tissue or hæmoptysis. The total number of patients treated has been twenty-five (fifteen men and ten women). Of these, as already said, three died "from the natural consequences of pulmonary phthisis which had reached the last stage." Even in these, however, some little objective improvement was noted, especially in the quantity of expectoration. It was remarked at the *post-mortem* examination on these cases that the cavities contained neither caseous material nor pus. In one of the cases in which there were tuberculous ulcers in the intestine, these showed signs of commencing cicatrisation. In the remaining twenty-two cases the existence of phthisis was absolutely proved, both by the physical signs and by the presence of bacilli in the sputum. In 2 cases "with manifest cavities" and other signs of advanced phthisis, the treatment was followed by almost immediate improvement; expectoration and cough ceased, the temperature became normal, night sweats disappeared, appetite returned, and weight was gained. In one of these cases the physical signs were so modified as to indicate that the excavations were much diminished in size. The bacilli were much fewer in one case; in the other, as there was no expectoration, nothing could be said as to this point. In six other cases of phthisis in the second stage, the results were still more remarkable. These and the other cases treated will be published by Professor Picot in full detail. During the thirteen years he has been teaching at Bordeaux, he has never before obtained such results from any kind of treatment. The cases of pleurisy treated in the same way were eight in number; five of these are still under treatment, and show marked improvement; three have been discharged "cured." Professor Picot sums up the effects of his remedy as follows: The injections improve the general condition, and lessen cough and expectoration. In certain cases they dry up cavities and favour their cicatrisation. In the second stage of phthisis they may make cough and expectoration disappear, whilst causing the cessation of fever and night sweats. They also diminish the number of bacilli in the sputum. Whether this is "cure" or not time and clinical experience alone can show. Dr. Picot thinks a tuberculous patient should be watched for five or six—perhaps even ten—years before he is pronounced to be cured.

---

(242) Effect of High Temperature on Disinfectants. Dr. Adolph Heider (*Centralbl. f. Bakt. u. Parasitenk.*, Bd. ix, No. 7, February 21st, 1891) gives an account of his experiments on the effect of a high temperature in increasing the power of disinfectants. Anthrax spores subjected to 5 per cent. carbolic acid at the ordinary temperature of the room were not destroyed in thirty-six days, whilst when the temperature was raised to 55° C. a similar carbolic acid solution killed these spores in from one to two hours. With 5 per cent. of sulpho-carbolic acid half an hour was sufficient, with 3 per cent. one hour, with a 5 per cent. emulsion of creasote two hours. Weaker solutions of these substances were not very effective in killing the spores until a temperature of about 75° C. was reached, in which case 5 per cent. carbolic acid killed the spores in three minutes, 3 per cent. in fifteen minutes, 1 per cent. in two to two and a half hours, 5 per cent. of sulpho-carbolic acid in one minute, 3 per cent. in ten minutes, 5 per cent. creasote emulsion in five minutes, 3 per cent. in fifteen minutes. Strong acids and alkalies had also their germicidal properties increased by the higher temperature, but the actions of creolin, pyoktanin, and lime water were all considerably interfered with by the higher temperature.

BACTERIOLOGY.

(243) New Micro-organism Found in Water. Dr. Giuseppe Sanarelli (*Centralbl. f. Bakt. u. Parasitenk.*, Bd. ix., Nos. 6 and 7, 1891) in the course of experiments on the behaviour of anthrax in the lymph sacs of the frog, found, in a certain spring, an organism, the bacillus hydrophilus fuscus, that was pathogenic for both cold and warm blooded animals. When cultivated from the blood or lymph of the frog on agar plates numerous round, smooth, greyish white colonies make their appearance in from twelve to twenty-four hours; these had a somewhat blueish translucent margin. Grown in agar tubes there is a

blueish fluorescence along the needle track, and gas bubbles are sometimes developed. At the end of three or four days the fluorescence disappears, the growths become brown in place of white. The rodlets examined from such a cultivation are small but motile; length 0.001 to 0.003 millimetres. Some are short and egg-shaped; the longer ones have usually a delicate transverse mark, as though of commencing division. The organism liquefies gelatine very rapidly, the liquefied gelatine being cloudy and funnel-shaped. In three or four days this liquefaction is complete, and there is a profuse white deposit or precipitate. The organism contains more long threadlike forms, some of them reaching 0.02 millimetre in length; it liquefies serum, causes cloudiness in broth, which is followed by the formation of a white film on the surface. On potatoes it grows after about twelve hours as a straw-coloured film, which then becomes yellow, and later brown, very like the glanders growth on potatoes. It can be distinguished from glanders and pyocyaneus growth on potatoes by the addition of a twenty per cent. solution of bichloride of mercury by the following reactions: Glanders, yellowish; pyocyaneus, greenish blue; fuscus, milky, somewhat reddish in the middle. The organism is equally infectious on whatever substance it is grown. It was found twice in waters taken from twenty-six sources. When injected into the parenchymatous tissue of frogs, toads, salamanders, lizards, barbel, and fresh water eels, it is distinctly pathogenic, usually killing them with signs of great local inflammation and congestion of the various internal organs, and hyaline and granular degeneration of the muscles. The organism is easily stained with a saturated solution of methylene blue in a one per cent. solution of osmic acid. It will not stain by Gram's method. The bacilli were found in groups, and within large leucocytes. It was noted that the stronger the local reaction was the later death set in; in eels this was very marked, large gangrenous swellings being formed in animals that survived some thirty-six to forty-eight hours. Guinea-pigs are very susceptible to the action of a small quantity of the virus; they are killed in about twelve hours. In one case a rabbit died three hours after subcutaneous injection. Puppies die in from twelve to thirty-six hours after inoculation, but old dogs are apparently unaffected. Kittens are readily affected, but full-grown cats, although there are marked local symptoms, may recover from the disease. White mice die in from seven to eight hours, bats in from five to six hours, hedgehogs in eighteen to thirty-six hours; fowls and pigeons can only be infected directly through the blood, when they die in from five to seven hours. In animals that die of this disease the bacilli are found in great numbers in both the organs and in the blood, and especially in the subcutaneous œdematous point. They may be in twos or threes, or in chains. This organism is remarkable from the fact that it affects so many species and such very different animals as the warm and cold blooded. Its action is, apparently, not due to any toxine that can be separated by filtration. In contra-distinction to Ernest's observations on a somewhat similar organism, Sanarelli finds (1) that the bacillus fuscus flourishes luxuriantly and retains its infective properties at over 30° C.; (2) that it develops quickly in warm-blooded animals; (3) that filtered but not boiled cultures cause no symptoms of poisoning when they are injected in ordinary doses.

(244) Bacteriology of Tetanus.

MM. L. VAILLIARD and H. VINCENT make a contribution to the study of tetanus (*Annales de l'Institut Pasteur*, January, 1891), in which they bring out a number of most important points. Using a modification of Kitasato's method, they were able to obtain pure cultures of the tetanus bacillus, the colonies of which, growing in gelatine *in vacuo*, appear on the fourth or sixth day as small cloudy spheres, each of which has a whitish point in the centre, the peripheral cloud being formed of white rays. Bubbles of gas appear near these colonies, and in ten to fifteen days liquefaction of the gelatine occurs. Under the microscope the characteristic "drumstick" shaped organisms, rods without heads, or long filaments were seen. They found that these organisms, though originally anaërobic, may by a gradual transition be rendered capable of growing, and even of remaining, pathogenic in the presence of a small quantity of free oxygen. The bacillus requires some time to develop its typical poison, especially if the temperature be not quite favourable, growths of the bacillus not being toxic until about the tenth day when the temperature is kept at 20° to 25° C., but eighteen-hour cultures are toxic when the growth is carried on at from 38° to 39° C. Here also, however, the growth becomes more virulent up to the tenth day. The artificially-prepared media are better for the culture of the bacillus than such substances as aqueous humour and fluid blood serum. Until the growths form spores, give rise to liquefaction of the gelatine, and the characteristic smell is given off, they are non-pathogenic; but as soon as these make their appearance the pathogenic activity also steps in. The organisms are slightly motile until the terminal enlargement is formed. Old cultures may remain alive for six months, the spores withstanding 80° C. for six hours, 90° C. for two hours, and 100° C. for three or four minutes. Light and air acting on dried organisms kill them off comparatively rapidly. Mice and guinea-pigs are very easily affected, but the poisonous dose for rabbits is about two hundred and fifty times as large as that required to kill these other animals, in addition to which the course of the disease is much slower. The poison appears to act directly on groups of muscles near the point of inoculation. Although the organism can grow in pus and in the earth, pure cultures are very rapidly destroyed at the seat of inoculation, as after twelve hours not a single bacillus could be found. The poison diffuses itself very rapidly through the body; glucose and maltose added to the fluid media increase the rapidity of the growth of the organisms, but cause a diminution in their pathogenic power. A fluid culture passed through a Chamberland filter gives a clear filtrate in which the tetanus bacillus can still grow and form a stronger solution of the poison. If this second fluid be again filtered and 20 cubic centimetres of broth be added to 350 of the filtrate, a third growth takes place, and an extremely toxic fluid is the result, one hundred-thousandth of a cubic centimetre being sufficient to kill a mouse. It appears, however, that the organism keeps the poison stored up in its own protoplasm in the dry condition, and only gives it up to fluids. The authors consider that it is somewhat of the nature of a diastase, that it peptonises gelatine, and that in peptonising the gelatine it loses some of its toxic power, according to the amount of gelatine upon which it acts,

It has, however, certain affinities with the venomous groups of poison, in that it acts in extremely small doses. So impressed were they with the extreme toxicity of the fluid that they hold that, in the case of pure cultures, the bacillus is so rapidly destroyed in the body that it is the poison which accompanies them that causes the death of the animal, and they conclude that this is the reason so many negative results have been obtained, the inoculations of young cultivations being made before the poison had had time to develop, as they found that by heating virulent cultures to 62° C. (when, of course, the organisms were not destroyed), animals inoculated did not die, but cultures made from the same material afterwards produced a quantity of poison that might cause the death of the animal. Similarly, if spores were thoroughly washed with distilled water so as to remove the whole of the accompanying poison, they no longer gave rise to tetanus when injected into an animal. If, however, lactic acid or trimethylamine be previously injected, or if the tissues be bruised, or if an inoculation of micro-bacillus prodigiosus be first made, and then even a smaller dose of the tetanus spores be inoculated, the animal almost inevitably dies of the disease, so that, just as in symtomatic anthrax, the organism, though not capable of developing alone, is, in the presence of this other factor, capable of developing and giving rise to its specific poison, and so of killing the animal. The authors have made a number of experiments, from which they conclude that the spores, when deprived of their poison, readily fall a prey to the leucocytes, the bacilli also being taken up in much the same way, and in from eighteen to twenty hours every trace of these organisms has disappeared. If, however, the leucocytes are paralysed by the presence of the poison or by the presence of any of the other devitalising influences above mentioned, the bacillus gets an opportunity of forming its poison, and so death from tetanus is the result. It is quite possible that lactic acid, like the tetanus poison, may prevent the coming up of the leucocytes to do the work at the point of injection, giving the bacilli an opportunity of developing, just as in ordinary culture media.

PATHOLOGY.

(245) Myeloma of Tendon Sheaths.

M. HEURTAUX (*Archives Générales de Médecine*, February, 1891), after giving details of five cases, makes the following remarks: This myeloma has always been found about the flexor tendons of the right hand, though there is no reason why it should not occur in other situations. The tumour when removed is seen to be rounded and lobulated. It is soft, but less friable than sarcoma. It springs from the sheath of the tendon, and this sheath, as well as its synovial membrane, is completely invaded. The other tissues are pushed aside, but never involved in the growth, and thus the benign nature of this tumour is shown. When examined with the microscope, some bands of fibrous tissue—the remains of the sheath—are still visible, and the intervals are filled up with embryonic cells, round and spindle-shaped, as well as myeloplaxes. The vessels vary in numbers, and their walls are thickened—a fact not observed in sarcoma. The clinical characters are as follows: There is a tumour upon the palmar surface of the metacarpo-phalangeal joint or of a phalanx of the size of a hazel nut, or even a walnut. The skin is unaffected, and the movements of the finger unimpaired except in so far as the tumour itself prevents flexion. There is no pain in it, and its course is slow, lasting from five to ten years, as in the cases reported. It does not ulcerate, or but rarely, and then very late. It must be distinguished from (1) serous synovitis—a rare disease, where a cylindrical and fluctuating swelling occupies the whole length of the synovial sheath; (2) fungous synovitis, which also tends to involve the whole length of the sheath; but here the movements of the fingers are limited; and later, when the skin reddens and ulcerates, the signs are distinctive; (3) from fibroid nodules in the tendon sheaths in rheumatic subjects—they are stationary; (4) from sarcoma—here the course is rapid, the pain great, and the movement of the finger limited. Treatment consists in dissecting out the growth completely. Esmarch's bandage should be used. The tendon may die if bared to too great an extent, or adhesions may form to parts around. But these cases mostly recover completely notwithstanding, and there is no recurrence.

(246) Hæmatoporphyrin in the Urine.

A NUMBER of cases have recently been recorded in which the iron-free derivative of hæmoglobin, called hæmatoporphyrin, has been described in the urine. The first recorded observations of this occurrence were made by MacMunn in June last, and the most recent, by Salkowski, are published in the *Centralb. f. d. med. Wiss.*, 1891, No. 8, p. 129. The three cases mentioned by Salkowski were in women, and one case ended fatally. The cause of the occurrence of this abnormal substance in the urine is supposed by Salkowski to be the administration of sulphonal. This is, however, an abnormal action of the drug, and would therefore appear to be due to individual idiosyncrasy.

PHYSIOLOGY.

(247) Powers of Perception of Children.

BINET (*Revue Philosophique*, December, 1890) has made a series of very interesting observations on the powers of perception of children. He experimented upon two little sisters, and found that the first colour to be recognised was invariably red. When between 1 and 2 years old they could easily recognise the entire figure drawn on paper in outline of some common object, as a man, but it was several years before they could with certainty recognise an outline drawing of some individual part—as an ear or a finger. Binet also investigated how far the ideas of children are spontaneous, and how far they are recollections of dreams, but he found it difficult to come to any conclusion. He points out that at first children always regard themselves in the third person, and he gives several interesting conversations which show that their ideas about all objects are utilitarian; for example, they look upon a knife as a thing to cut with, bread as something to be eaten, and so on.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.